

**EAST ASIAN CORPORATE GOVERNANCE:  
A TEST OF THE RELATION BETWEEN CAPITAL STRUCTURE AND  
FIRM PERFORMANCE****Ari Warokka**

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**—Abstract—**

Corporate governance theory predicts that leverage affects agency costs and thereby influences firm performance. Agency costs represent important problems in corporate governance in both financial and non-financial industries. Prior evidences have demonstrated an association between ownership structures, capital structure, and firm performance.

This study extends the literature by proposing a further link between capital structure and firm performance in term of post Asian Financial Crisis that is rarely investigated. Using an agency framework, the research argues that the distribution of equity ownership among corporate managers and external block holders has a significant relationship with leverage and firm performance, and there is reverse causality effect between ownership structure, capital structure, and firm performance. The paper tests two hypotheses that explore various aspects of this relationship. This study uses 532 East Asian companies, which are located in

seven most affected countries when the crisis took place during period 1996-1997. The time frame of analysis is 2000-2001 period that is believed as a start of recovery period. Statistic methods used for testing the hypothesis are t-test and multivariate regression model.

The empirical results indicate that the East Asian companies after the crisis apply the efficiency-risk argument. In analyzing the reverse causation of capital structure and corporate performance relation, the result confirms the incentive signaling approach, which debt can be used to signal the fact that firm has prospect and equity issues may be interpreted as a negative signal.

**Key Words:** *Agency Cost, Ownership Structure, Leverage, Firm Performance*

**JEL Classification:** G01 · G30 · G32 · G34 ·

## 1. INTRODUCTION

### 1.1. Problem Background

The topic of optimal capital structure has been the subject of many studies. It has been argued that profitable firms were less likely to depend on debt in their capital structure than less profitable ones. It has also been argued that firms with a high growth rate have a high debt to equity ratio. Bankruptcy costs (proxied by firm size) were also found to be an important effect on capital structure (Kraus and Litzenberger, 1973; Harris and Raviv, 1991). If these three factors are considered as determinants of capital structure, then these factors could be used to determine the firm's performance. In practice, firm managers who are able to identify the optimal capital structure are rewarded by minimizing a firm's cost of finance, thereby maximizing the firm's revenue. If a firm's capital structure influences a firm's performance, then it is reasonable to expect that the firm's capital structure would affect the firm's health and its likelihood of default.

On the other side, theory suggests that the choice of capital structure may help mitigate these agency costs. Under the agency costs hypothesis, high leverage or a low equity/asset ratio reduces the agency costs of outside equity and increases firm value by constraining or encouraging managers to act more in the interests of shareholders. Since the seminal paper by Jensen and Meckling (1976), a vast

literature on such agency-theoretic explanations of capital structure has developed (Harris and Raviv, 1991; Myers, 2001). Greater financial leverage may affect managers and reduce agency costs through the threat of liquidation, which causes personal losses to managers of salaries, reputation, perquisites, etc. (Grossman and Hart, 1982), and through pressure to generate cash flow to pay interest expenses (Jensen, 1986). Higher leverage can mitigate conflicts between shareholders and managers concerning the choice of investment (Myers, 1977), the amount of risk to undertake (Jensen and Meckling, 1976), the conditions under which the firm is liquidated (Harris and Raviv, 1991), and dividend policy (Stulz, 1990).

The purpose of this study is predominantly to take a closer look on the concepts and theories of capital structure and firm performance. This research has a closed relation to the relationship between ownership structure and performance. The survey here is to analyze the possibility of non-monotonic and endogeneity relationship of capital structure and firm performance. The prior researches generally do not take into account the possibility of reverse causation from performance to capital structure. If firm performance affects the choice of capital structure, then failure to consider this reverse causality may result in simultaneous-equations bias. That is, regressions of firm performance on a measure of leverage may confound the effects of capital structure on performance with the effects of performance on capital structure. Therefore, the remainder of the paper is organized around two prominent hypotheses about capital structure and firm performance.

## **2. LITERATURE REVIEW**

### **2.1. Capital Structure and Firm Performance**

In the relation between capital structure and firm performance, four ideas are relevant. The first is the incentive signaling approach. If two firms have differing prospects, which are known by management but not discerned by investors, debt can be used to signal the fact that prospects differ and equity issues may be interpreted as a negative signal (Myers and Majluf, 1984). Ross (1977) argues that a firm with better prospects can issue more debt than one with lower prospects, because the issue of debt by the latter will result in a higher probability of

bankruptcy because of debt-servicing costs, which is a costly outcome to management. Therefore, a higher level of debt will be associated with a higher level of performance.

The second idea, one of resource constraints, is advanced by Jensen and Meckling (1976). In the situation where an entrepreneur has limited resources, then should capital be raised as equity or debt becomes an issue. The placement of equity dilutes an owner-manager's share of profits, and thereby entrepreneurial incentives, motivating on-the-job consumption. Raising debt avoids the sacrifice of incentive intensity since the entrepreneur can internalize to a greater degree the benefits of superior profitability. Therefore, more highly leveraged firms will be more profitable, since the entrepreneur or owner-manager will not have undertaken on-the-job consumption.

A firm may issue debt to persuade the market that the management will pursue profits, which will generate the necessary cash so as to service the debt, rather than indulge in managerial discretionary behavior. By issuing debt, management, as agent, deliberately changes its incentive structure so as to bring it in line with those of shareholders, the principals, because of the resulting impact on market value; or, in other words, management bonds itself to act in the best interest of its shareholders. Hence, higher levels of debt in the firm's capital structure will be directly associated with higher performance levels (Grossman and Hart, 1986). The principal hypothesis prevalent in the literature is that a higher level of debt in a firm's capital structure is associated with a higher level of performance, leading to the generation of greater cash flows.

An alternative hypothesis, however, also exists in which states that high leverage is associated with long-term performance declines. Debt holders are assumed to be more risk averse than equity holders (Smith and Warner, 1979). Consequently, they force managers to abandon risky projects and cut back on R&D expenditures. There is evidence suggesting that a negative relationship exists between R&D intensity and long-term debts (Baysinger and Hoskisson, 1989). Leverage is, therefore, associated with decline in firms' innovativeness and the long-run consequence of such decline in innovativeness is a worsening of performance.

## **2.2. Theories of Reverse Causality from Performance to Capital Structure**

As noted, prior researches on agency costs generally do not take into account the possibility of reverse causation from performance to capital structure, which may result in simultaneous-equations bias. Berger and Udell (2002) offer two hypotheses of reverse causation based on violations of the Modigliani-Miller perfect-markets assumption. It is assumed that various market imperfections (e.g., taxes, bankruptcy costs, asymmetric information) result in a balance between those favoring more versus less equity capital, and that differences in profit efficiency move the optimal equity capital ratio marginally up or down (Harris and Raviv, 1991; Myers, 2001).

Under the efficiency-risk hypothesis, firms that are more efficient choose lower equity ratios than other firms, all else equal, because higher efficiency reduces the expected costs of bankruptcy and financial distress. Under this hypothesis, higher profit efficiency generates a higher expected return for a given capital structure, and the higher efficiency substitutes to some degree for equity capital in protecting the firm against future crises (Berger and Udell, 2002).

Meanwhile, franchise-value hypothesis focuses on the income effect of the economic rents generated by profit efficiency on the choice of leverage. Under this hypothesis, firms that are more efficient choose higher equity capital ratios, all else equal, to protect the rents or franchise value associated with high efficiency from the possibility of liquidation. Higher profit efficiency may create economic rents if the efficiency is expected to continue in the future, and shareholders may choose to hold extra equity capital to protect these rents, which would be lost in the event of liquidation, even if the liquidation involves no overt bankruptcy or distress costs (Berger and Udell, 2002).

These two hypotheses yield opposite predictions from one another for the effects of profit efficiency on equity capital or leverage. The two individual effects may be thought of as substitution and income effects. Under the efficiency-risk hypothesis, the expected earnings from high profit efficiency substitute for equity capital in protecting the firm from the expected costs of bankruptcy or financial distress, whereas under the franchise-value hypothesis, firms try to protect the income from high profit efficiency by holding additional equity capital. Berger

and di Patti (2002) interpret their findings as the net effect of these two hypotheses. Thus, these hypotheses are only partially identifiable in the sense that they can only distinguish which one is more important than the other is.

If firm performance affects the choice of capital structure and vice versa, then the failure to take this into account may result in serious simultaneity bias, with important implications for pattern of firm financing and performance. In the light of the two-way relationship between capital structure and firm efficiency, one needs to allow for the simultaneity between capital structure and firm performance. Thus, two hypotheses will be tested in this research; firstly, firms with a higher level of external block holdings, low levels of managerial share ownership, and higher firm performance are likely to have a higher debt ratio, *ceteris paribus*. The second hypothesis argues that firms with a higher level of external block holdings, low levels of managerial share ownership, and higher debt are likely to have a higher firm performance, *ceteris paribus*.

As argued above, firms with higher profit margins may substitute outside equity capital for debt. On the other hand, it may also be true that firms that are more efficient try to protect the value of their high income by holding more equity capital.

### **3. RESEARCH MODEL AND RESULTS**

In this paper, the test of capital structure effect on performance and its reverse causality is done by using 532 East Asian companies, which are located in seven most affected countries when the crisis took place during period 1996-1997.

By replicating and adapting the work of Brailsford et al. (2002), the first hypothesis proposes that firms with higher firm performance, higher levels of external block holdings, and low level of managerial share ownership will have higher debt ratio. This hypothesis is tested by regressing the dependent variable,  $\ln(D/E)$  against the Tobin's Q and ROE, the external block ownership (EBO), the managerial share ownership (MSO), and control variables. Meanwhile, for the two-way relationship between capital structure and firm performance, the second hypothesis is tested by regressing the dependent variables, Tobin's Q and ROE

against  $\ln(D/E)$ , the external block ownership (EBO), the managerial share ownership (MSO), and control variables.

There are two variables used to control for risk, i.e. size, which is natural log of total assets, and industry classification, which is  $IND = 1$  if industrial company and  $IND = 0$  if natural resources company. The three variables used to control for agency costs are growth (G), which is the annual percentage change in total assets (Titman and Wessels, 1988), free cash flow (FCF), which is a direct measure of Jensen's (1986) free cash flow hypothesis, and profitability (PROF), which is operating income before interest and taxes scaled by total assets (Myers and Majluf, 1984). To measure asset specificity, it is used two variables control, i.e. intangible assets to total assets (Balakrishnan and Fox, 1993) and to measure the effect of taxes is used non-debt tax shield, which is put forward by DeAngelo and Masulis (1980).

### **3.1. Research Results**

A positively and significantly relation between Tobin's Q and leverage can be interpreted that the East Asian companies after the crisis apply the efficiency-risk hypothesis (see Table 1). It means higher profit efficiency has generated a higher expected return for those companies in a given capital structure, and the higher efficiency has substituted to some degree for equity capital in protecting the firm against future crises. In the other words, firms with high-expected returns owing to high profit efficiency can hold lower equity ratios. It is also interpreted that firms that are more efficient are considered from lenders as more solvent and consequently they can be expected to be more leveraged than less efficient ones. This result is consistent with Sarkar and Sarkar (2005) that tested the effect of Tobin's Q on leverage in Indian companies post East Asian crisis. They found that the Tobin's Q is related positively and significantly to leverage in low and high growth firms.

The negative and significant coefficient for IND (industry) variable could be as a result of the negative ROE value for some firms included in the analysis as a result of distress. It also means that natural resource companies in East Asia less use leverage as source of expanding. Meanwhile, GROWTH variable has a negative and significant coefficient that means firms with high debt levels

sometimes forego of an investment project in spite of expectations of high returns because of the reluctance of creditors to finance the project.

**Table-1: The Statistical Results of the Relation between Capital Structure and Firm Performance**

The Effect of Firm Performance Measures on Capital Structure			The Effect of Capital Structure on Firm Performance Measures			
$\ln(D/E)_{it} = \alpha_0 + \beta_0 \text{Tobin-Q}_{it} + \beta_1 \text{ROE}_{it} + \beta_2 \text{MSO}_{it} + \beta_3 \text{MSO}^2_{it} + \beta_4 \text{EBO}_{it} + \beta_5 (D^* \text{EBO}_{it}) + \beta_6 \text{SIZE}_{it} + \beta_7 \text{IND}_{it} + \beta_8 \text{GROWTH}_{it} + \beta_9 \text{PROF}_{it} + \beta_{10} \text{FCF}_{it} + \beta_{11} \text{INTA}_{it} + \beta_{12} \text{NDTS}_{it} + e_{it}$			$\text{Tobin-Q}_{it} \text{ or } \text{ROE}_{it} = \alpha_0 + \beta_0 \ln(D/E)_{it} + \beta_1 \text{MSO}_{it} + \beta_2 \text{MSO}^2_{it} + \beta_3 \text{EBO}_{it} + \beta_4 (D^* \text{EBO}_{it}) + \beta_5 \text{SIZE}_{it} + \beta_6 \text{IND}_{it} + \beta_7 \text{GROWTH}_{it} + \beta_8 \text{PROF}_{it} + \beta_9 \text{FCF}_{it} + \beta_{10} \text{INTA}_{it} + \beta_{11} \text{NDTS}_{it} + e_{it}$			
Ln D/E			Tobin's Q		ROE	
Variable	Coefficient	T-Statistic	Coefficient	T-Statistic	Coefficient	T-Statistic
Constant	-2.450	-9.027	-1.007	-4.087	-1.007	-4.087
D/E			.069	1.832***	.010	.079
Tobin's Q	.093	1.829***				
ROE	.000	.010				
MSO	2.758	2.305**	-1.718	-1.671***	-3.245	-.942
MSO <sup>2</sup>	-3.857	-2.023**	4.059	2.489**	4.209	.770
EBO	.781	3.355*	.581	2.904*	-.117	-.174
D(EBO)	-.220	-1.095	.113	.655	.404	.701
SIZE	.240	7.075*	-.050	-1.646***	.034	.334
Industry	-.253	-2.459**	.059	.663	-.200	-.674
GrowthTA	-.002	-2.239**	3.46E-005	.054	.000	.075
PROF	-2.278	-5.713*	.130	.371	-1.554	-1.318
FCF	6.68E-005	.374	-4.28E-005	-.279	4.32E-005	.084
INTA	.110	.165	.738	1.293	-1.007	-.526
NDTS	-2.645	-1.608	7.660	5.578*	-.203	-.044
F-Value	9.680*		5.003*		0.336	
R-square	0.195		0.104		0.008	

Note: \*p < 1%, \*\* p < 5%, \*\*\* p < 10%

In the reverse causality, in which capital structure is endogenous variable, a positively and significantly relation between leverage and Tobin's Q is consistent with the incentive signaling approach, which debt can be used to signal the fact that firm has prospect and equity issues may be interpreted as a negative signal. Ross (1977) argues that a firm with better prospects can issue more debt than one with lower prospects, because the issue of debt by the latter will result in a higher



probability of bankruptcy because of debt-servicing costs, which is a costly outcome to management. This result is also consistent with the resource constraints approach (Jensen and Meckling, 1976), which argues, that in the situation, where an entrepreneur has limited resources, then the question of should capital be raised as equity or debt becomes an issue. However, this research result is different from Krishnan and Moyer (1997) who found a negative and significant impact of total debt to total equity (TD/TE) on firm performance. Otherwise, another study by Gleason et al. (2000) found that firm's capital structure has a negative and significant impact on firm's performance

The SIZE dummy variables have negative and significant coefficients, suggesting that larger firms tend to be less efficient, everything else equal. It is also consistent with the conventional wisdom that larger firms are better diversified and they can thus hold less capital to buffer against losses. It can be said that the significance of firm size indicates that large firms earn higher returns compared to smaller firms, presumably as a result of diversification of investment and economies of scale. This result is consistent with previous findings including Gleason et al. (2000), among others.

### **3. CONCLUSION**

Generally, the multivariate regression results support the prior researches. In the relationship between leverage (as endogenous variable) and firm performance and the probability of its non-monotonic relationship under the framework of agency theory, this research find that the East Asian companies after the crisis apply the efficiency-risk hypothesis. Meanwhile, a positively and significantly relation between leverage and Tobin's Q, which performance measure is endogenous variable, is consistent with the incentive signaling approach, which debt can be used to signal the fact that firm has prospect and equity issues may be interpreted as a negative signal. In practice, firm managers who are able to identify the optimal capital structure are rewarded by minimizing the firm cost of finance thereby maximizing the firm's revenue. If a firm's capital structure influences a firm's performance, then it is reasonable to expect that the firm's capital structure would affect the firm's health and its likelihood of default.

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